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NEWS 2		"Ask CAS" for self-help around the clock
NEWS 3	Feb 24	PCTGEN now available on STN
NEWS 4	Feb 24	TEMA now available on STN
NEWS 5	Feb 26	NTIS now allows simultaneous left and right truncation
NEWS 6	Feb 26	PCTFULL now contains images
NEWS 7	Mar 04	SDI PACKAGE for monthly delivery of multifile SDI results
NEWS 8	Mar 24	PATDPAFULL now available on STN
NEWS 9	Mar 24	Additional information for trade-named substances without structures available in REGISTRY
NEWS 10	Apr 11	Display formats in DGENE enhanced
NEWS 11	Apr 14	MEDLINE Reload
NEWS 12	Apr 17	Polymer searching in REGISTRY enhanced
NEWS 13	Jun 13	Indexing from 1947 to 1956 added to records in CA/CAPLUS
NEWS 14	Apr 21	New current-awareness alert (SDI) frequency in WPIDS/WPINDEX/WPIX
NEWS 15	Apr 28	RDISCLOSURE now available on STN
NEWS 16	May 05	Pharmacokinetic information and systematic chemical names added to PHAR
NEWS 17	May 15	MEDLINE file segment of TOXCENTER reloaded
NEWS 18	May 15	Supporter information for ENCOMPPAT and ENCOMPLIT updated
NEWS 19	May 19	Simultaneous left and right truncation added to WSCA
NEWS 20	May 19	RAPRA enhanced with new search field, simultaneous left and right truncation
NEWS 21	Jun 06	Simultaneous left and right truncation added to CBNB
NEWS 22	Jun 06	PASCAL enhanced with additional data
NEWS 23	Jun 20	2003 edition of the FSTA Thesaurus is now available
NEWS 24	Jun 25	HSDB has been reloaded
NEWS 25	Jul 16	Data from 1960-1976 added to RDISCLOSURE
NEWS 26	Jul 21	Identification of STN records implemented
NEWS 27	Jul 21	Polymer class term count added to REGISTRY
NEWS 28	Jul 22	INPADOC: Basic index (/BI) enhanced; Simultaneous Left and Right Truncation available
NEWS EXPRESS	April 4 CURRENT WINDOWS VERSION IS V6.01a, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003	
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DN PREV200300129199  
TI Purification and characterization of an oxidation-stable, thiol-dependent  
serine **alkaline protease** from **Bacillus**  
mojavensis.  
AU Beg, Qasim Khalil; Gupta, Rani (1)  
CS (1) Department of Microbiology, University of Delhi, Benito Juarez Marg,  
South Campus, New Delhi, 110 021, India: ranigupta15@rediffmail.com,  
microzyme@123india.com India  
SO Enzyme and Microbial Technology, (3 February 2003) Vol. 32, No. 2, pp.  
294-304. print.  
ISSN: 0141-0229.  
DT Article  
LA English

L8 ANSWER 2 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 2003:532771 CAPLUS  
TI An **alkaline protease** from **Bacillus** sp. DSM  
14390 for use in washing and cleaning compositions  
IN Weber, Angrit; Hellebrandt, Angela; Schmitz, Susanne; Maurer, Karl-heinz;  
Kottwitz, Beatrix  
PA Henkel Kommanditgesellschaft Auf Aktien, Germany  
SO PCT Int. Appl., 112 pp.  
CODEN: PIXXD2  
DT Patent  
LA German  
FAN.CNT 1

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AN 2003:212619 CAPLUS

DN 139:67825  
 TI Novel **alkaline proteases** from alkalophilic bacteria  
 grown on chicken feather  
 AU Gessesse, Amare; Hatti-Kaul, Rajni; Gashe, Berhanu A.; Mattiasson, Bo  
 CS Institute of Life Sciences, Department of Biotechnology, Aalborg  
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 SO Enzyme and Microbial Technology (2003), 32(5), 519-524  
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 DN 130:293280  
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**Bacillus** and **detergent** composition containing the  
**alkaline protease**  
 IN Takaiwa, Mikio; Okuda, Mitsuyoshi; Saeki, Katsuhisa; Kubota, Hiromi;  
 Hitomi, Jun; Kageyama, Yasushi; Shikata, Shitsuw; Nomura, Masafumi  
 PA Kao Corporation, Japan  
 SO PCT Int. Appl., 71 pp.  
 CODEN: PIXXD2  
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 AN 1997:757111 CAPLUS  
 DN 128:20054  
 TI Cold-active **alkaline proteases** of microbial origins  
 and their use for preparing detergent and processing food  
 IN Takaiwa, Mikio; Saeki, Katsuhisa; Okuda, Mitsuyoshi; Kobayashi, Toru; Ito,  
 Susumu; Kubota, Hiromi; Ota, Yasuhiko; Fujimori, Naoko  
 PA Kao Corporation, Japan; Takaiwa, Mikio; Saeki, Katsuhisa; Okuda,  
 Mitsuyoshi; Kobayashi, Toru; Ito, Susumu; Kubota, Hiromi; Ota, Yasuhiko;  
 Fujimori, Naoko  
 SO PCT Int. Appl., 109 pp.  
 CODEN: PIXXD2

DT Patent  
 LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 9743406	A1	19971120	WO 1997-JP1555	19970509
	W: CN, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	JP 09299083	A2	19971125	JP 1996-116094	19960510
	JP 09299080	A2	19971125	JP 1996-116095	19960510
	JP 09299084	A2	19971125	JP 1996-116096	19960510
	JP 09299081	A2	19971125	JP 1996-116097	19960510
	JP 09299082	A2	19971125	JP 1996-116098	19960510
PRAI	JP 1996-116094		19960510		
	JP 1996-116095		19960510		
	JP 1996-116096		19960510		
	JP 1996-116097		19960510		
	JP 1996-116098		19960510		

L8 ANSWER 6 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1995:943601 CAPLUS  
 DN 123:333762  
 TI Preparation of **alkaline protease** with **Bacillus**  
 strain TS50093  
 IN Nobiki, Masayoshi; Fujiwara, Yoshio; Ichijima, Eiji; Yamagata, Yohei  
 PA Showa Denko Kk, Japan  
 SO Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07236482	A2	19950912		
PRAI	JP 1994-54613		19940228	JP 1994-54613	19940228

L8 ANSWER 7 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1995:677354 CAPLUS  
 DN 123:78432  
 TI A novel **alkaline protease** of **Bacillus**  
 THS-1001 and its coding gene  
 IN Ichijima, Eiji; Yamagata, Yohei  
 PA Showa Denko Kk, Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07095882	A2	19950411		
PRAI	JP 1993-263139		19930928	JP 1993-263139	19930928

L8 ANSWER 8 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1994:624989 CAPLUS  
 DN 121:224989  
 TI Preparation of **alkaline protease** K-16M with **Bacillus**  
 and use in detergents  
 IN Kobayashi, Tooru; Hakamata, Yoshihiro; Hitomi, Jun; Kawai, Shuji; Ito,  
 Susumu  
 PA Kao Corp, Japan  
 SO Jpn. Kokai Tokkyo Koho, 14 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05308967	A2	19931122		
	JP 2908933	B2	19990623	JP 1992-141032	19920507
PRAI	JP 1992-141032		19920507		

L8 ANSWER 9 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1994:624988 CAPLUS  
 DN 121:224988  
 TI Preparation of **alkaline protease** K-16N with Bacillus  
 and use in detergents  
 IN Hakamata, Yoshihiro; Kobayashi, Tooru; Hitomi, Jun; Koike, Kenzo; Kawai,  
 Shuji; Ito, Susumu  
 PA Kao Corp, Japan  
 SO Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05308966	A2	19931122		
PRAI	JP 1992-141031		19920507	JP 1992-141031	19920507

L8 ANSWER 10 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1994:528754 CAPLUS  
 DN 121:128754  
 TI Preparation of **alkaline protease** of Bacillus  
 and its use for detergent  
 IN Ichijima, Eiji; Yamagata, Yohei  
 PA Showa Denko Kk, Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06070765	A2	19940315		
PRAI	JP 1992-207302		19920710	JP 1992-296360	19921008

L8 ANSWER 11 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1994:503084 CAPLUS  
 DN 121:103084  
 TI Novel alkaline lipase and its preparation with Pseudomonas  
 IN Iwama, Yasushi; Saito, Nobuko; Akino, Toshiro  
 PA Godo Shusei Kk, Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06153942	A2	19940603		
PRAI	JP 1992-339460		19921127	JP 1992-339460	19921127

L8 ANSWER 12 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1994:128511 CAPLUS  
 DN 120:128511  
 TI Novel **alkaline proteases** from Bacillus and  
 their manufacture for laundry detergents

IN Boyer, Ernest W.; Byng, Graham S.  
PA Solvay Enzymes, Inc., USA  
SO Eur. Pat. Appl., 16 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 571014	A1	19931124	EP 1993-201288	19930506
	R: BE, DE, DK, FR, NL				
	JP 06078768	A2	19940322	JP 1993-116028	19930518
	US 5518917	A	19960521	US 1994-180336	19940112
	US 5385837	A	19950131	US 1994-181872	19940113
	US 5565348	A	19961015	US 1995-390570	19950217
PRAI	US 1992-884184		19920518		
	US 1994-180336		19940112		

L8 ANSWER 13 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1993:423681 CAPLUS  
DN 119:23681

TI A novel **alkaline protease** produced by **Bacillus**  
and its use in washing compositions  
IN Hsiao, Hung Yu; Fodge, Douglas W.; Lalonde, James J.  
PA Chemgen Corp., USA; Vista Chemical Co.  
SO PCT Int. Appl., 57 pp.  
CODEN: PIXXD2

DT Patent  
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9307276	A1	19930415	WO 1992-US8341	19921007
	W: AU, BG, BR, CA, CS, FI, HU, JP, KR, NO, PL, RO, RU				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE				
	US 5275945	A	19940104	US 1991-772087	19911008
	AU 9227909	A1	19930503	AU 1992-27909	19921007
PRAI	US 1991-772087		19911008		
	WO 1992-US8341		19921007		

L8 ANSWER 14 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1993:2958 CAPLUS  
DN 118:2958

TI An **alkaline protease** from a novel microorganism  
suitable for laundry detergents  
IN Sawayanagi, Toyoji; Saito, Mina; Tsuzuki, Toshi; Fujiwara, Yoshio;  
Noguchi, Yoshitaka  
PA Showa Denko K. K., Japan  
SO Eur. Pat. Appl., 21 pp.  
CODEN: EPXXDW

DT Patent  
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 510673	A2	19921028	EP 1992-107037	19920424
	EP 510673	A3	19930623		
	R: BE, DE, ES, FR, GB, IT, NL				
	CA 2066556	AA	19921027	CA 1992-2066556	19920421
	JP 05252949	A2	19931005	JP 1992-129560	19920422
	AU 9215144	A1	19921029	AU 1992-15144	19920424
	AU 657527	B2	19950316		

US 5387518 A 19950207 US 1992-873168 19920424  
PRAI JP 1991-125457 19910426

L8 ANSWER 15 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1992:233913 CAPLUS  
DN 116:233913

TI **Alkaline protease** manufacture with **Bacillus**  
for use in laundry detergents  
IN Utsura, Kensaku; Utsura, Junko; Yoshida, Ritsuko; Takesada, Yoshiaki;  
Kojima, Iwao; Kataoka, Mitsuhiko; Minami, Yoshiaki; Yamauchi, Saburo  
PA Nagase Biochemical Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 11 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04016186	A2	19920121		
PRAI	JP 1990-120543		19900509	JP 1990-120543	19900509

L8 ANSWER 16 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1991:654327 CAPLUS  
DN 115:254327

TI Thermostable **alkaline protease** manufacture with  
**Bacillus** for laundry detergents  
IN Sawayanagi, Toyoji; Saito, Mina; Tsuzuki, Satoshi; Suzuki, Takashi;  
Tsumita, Yasuo  
PA Showa Denko K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03191781	A2	19910821		
	JP 2882652	B2	19990412	JP 1989-330069	19891220
PRAI	JP 1989-330069		19891220		

L8 ANSWER 17 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1991:205553 CAPLUS  
DN 114:205553

TI Thermostable **alkaline protease** manufacture with  
**Bacillus**  
IN Takami, Hideto; Horikoshi, Koki; Akiba, Akihiko  
PA Kurita Water Industries, Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02255087	A2	19901015		
PRAI	JP 1989-74720		19890327	JP 1989-74720	19890327

L8 ANSWER 18 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1985:202605 CAPLUS  
DN 102:202605

TI Basic protease by fermentation  
PA Showa Denko K. K. , Japan

SO Neth. Appl., 35 pp.

CODEN: NAXXAN

DT Patent

LA Dutch

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 8302790	A	19850301	NL 1983-2790	19830808
	NL 194443	B	20011203		
	NL 194443	C	20020404		
PRAI	NL 1983-2790		19830808		

L8 ANSWER 19 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAW24069 Protein DGENE

TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)

IN Aaslyng D A; Dambmann C; Outtrup H; Sloma A P  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.

PI WO 9634963 A1 19961107

AI WO 1996-US6097 19960501

PRAI US 1995-434255 19950503

DT Patent

LA English

OS 1996-506165 [50]

CR N-PSDB: AAT85616-17

DESC PD498 **alkaline protease.**

L8 ANSWER 20 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAW24074 Protein DGENE

TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)

IN Aaslyng D A; Dambmann C; Outtrup H; Sloma A P  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.

PI WO 9634963 A1 19961107

AI WO 1996-US6097 19960501

PRAI US 1995-434255 19950503

DT Patent

LA English

OS 1996-506165 [50]

CR N-PSDB: AAT85622

DESC Lipolase.

L8 ANSWER 21 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAW24073 Protein DGENE

TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)

IN Aaslyng D A; Dambmann C; Outtrup H; Sloma A P  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.

PI WO 9634963 A1 19961107

AI WO 1996-US6097 19960501

PRAI US 1995-434255 19950503

DT Patent

LA English

OS 1996-506165 [50]

CR N-PSDB: AAT85621

DESC PD498 **alkaline protease** signal peptide.

L8 ANSWER 22 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
 AN AAW24072 Protein DGENE  
 TI **Alkaline protease** nucleic acid coding sequence - used  
 to develop prods for use in detergents and for the recombinant expression  
 of polypeptide(s)  
 IN Aaslyng D A; Dambmann C; Outtrup H; Sloma A P  
 PA (NOVO) NOVO NORDISK BIOTECH INC.  
 (NOVO) NOVO-NORDISK AS.  
 PI WO 9634963 A1 19961107 67p  
 AI WO 1996-US6097 19960501  
 PRAI US 1995-434255 19950503  
 DT Patent  
 LA English  
 OS 1996-506165 [50]  
 CR N-PSDB: AAT85619  
 DESC PD498 **alkaline protease** C-terminal fragment.

L8 ANSWER 23 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
 AN AAT85617 DNA DGENE  
 TI **Alkaline protease** nucleic acid coding sequence - used  
 to develop prods for use in detergents and for the recombinant expression  
 of polypeptide(s)  
 IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
 PA (NOVO) NOVO NORDISK BIOTECH INC.  
 (NOVO) NOVO-NORDISK AS.  
 PI WO 9634963 A1 19961107 67p  
 AI WO 1996-US6097 19960501  
 PRAI US 1995-434255 19950503  
 DT Patent  
 LA English  
 OS 1996-506165 [50]  
 CR P-PSDB: AAW24069  
 DESC PD498 **alkaline protease** coding sequence.

L8 ANSWER 24 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
 AN AAT85616 DNA DGENE  
 TI **Alkaline protease** nucleic acid coding sequence - used  
 to develop prods for use in detergents and for the recombinant expression  
 of polypeptide(s)  
 IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
 PA (NOVO) NOVO NORDISK BIOTECH INC.  
 (NOVO) NOVO-NORDISK AS.  
 PI WO 9634963 A1 19961107 67p  
 AI WO 1996-US6097 19960501  
 PRAI US 1995-434255 19950503  
 DT Patent  
 LA English  
 OS 1996-506165 [50]  
 CR P-PSDB: AAW24069  
 DESC PD498 **alkaline protease** coding sequence.

L8 ANSWER 25 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
 AN AAT85628 DNA DGENE  
 TI **Alkaline protease** nucleic acid coding sequence - used  
 to develop prods for use in detergents and for the recombinant expression  
 of polypeptide(s)  
 IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
 PA (NOVO) NOVO NORDISK BIOTECH INC.  
 (NOVO) NOVO-NORDISK AS.  
 PI WO 9634963 A1 19961107 67p  
 AI WO 1996-US6097 19960501



PRAI US 1995-434255 19950503  
DT Patent  
LA English  
OS 1996-506165 [50]  
DESC CryIIIA promoter.

L8 ANSWER 26 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAT85627 DNA DGENE  
TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)  
IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.  
PI WO 9634963 A1 19961107 67p  
AI WO 1996-US6097 19960501  
PRAI US 1995-434255 19950503  
DT Patent  
LA English  
OS 1996-506165 [50]  
DESC Primer for alpha-amylase (amyL) promoter amplification.

L8 ANSWER 27 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAT85626 DNA DGENE  
TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)  
IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.  
PI WO 9634963 A1 19961107 67p  
AI WO 1996-US6097 19960501  
PRAI US 1995-434255 19950503  
DT Patent  
LA English  
OS 1996-506165 [50]  
DESC Primer for alpha-amylase (amyL) promoter amplification.

L8 ANSWER 28 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAT85625 DNA DGENE  
TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)  
IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.  
PI WO 9634963 A1 19961107 67p  
AI WO 1996-US6097 19960501  
PRAI US 1995-434255 19950503  
DT Patent  
LA English  
OS 1996-506165 [50]  
DESC Alpha-amylase (amyL) promoter.

L8 ANSWER 29 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAT85622 DNA DGENE  
TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)  
IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.

PI WO 9634963 A1 19961107  
AI WO 1996-US6097 19960501  
PRAI US 1995-434255 19950503  
DT Patent  
LA English  
OS 1996-506165 [50]  
CR P-PSDB: AAW24074  
DESC Lipolase coding sequence.

67p

L8 ANSWER 30 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAT85621 DNA DGENE  
TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)

IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.

PI WO 9634963 A1 19961107  
AI WO 1996-US6097 19960501  
PRAI US 1995-434255 19950503

67p

DT Patent  
LA English  
OS 1996-506165 [50]  
CR P-PSDB: AAW24073  
DESC PD498 **alkaline protease** signal peptide coding  
sequence.

L8 ANSWER 31 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAT85619 DNA DGENE  
TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)

IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.

PI WO 9634963 A1 19961107  
AI WO 1996-US6097 19960501  
PRAI US 1995-434255 19950503

67p

DT Patent  
LA English  
OS 1996-506165 [50]  
CR P-PSDB: AAW24072  
DESC PD498 **alkaline protease** C-terminal fragment coding  
sequence.

L8 ANSWER 32 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
AN AAT85633 DNA DGENE  
TI **Alkaline protease** nucleic acid coding sequence - used  
to develop prods for use in detergents and for the recombinant expression  
of polypeptide(s)

IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
PA (NOVO) NOVO NORDISK BIOTECH INC.  
(NOVO) NOVO-NORDISK AS.

PI WO 9634963 A1 19961107  
AI WO 1996-US6097 19960501  
PRAI US 1995-434255 19950503

67p

DT Patent  
LA English  
OS 1996-506165 [50]  
DESC Primer for BAN promoter amplification.

L8 ANSWER 33 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN

AN AAT85632 DNA DGENE  
 TI **Alkaline protease** nucleic acid coding sequence - used  
 to develop prods for use in detergents and for the recombinant expression  
 of polypeptide(s)  
 IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
 PA (NOVO) NOVO NORDISK BIOTECH INC.  
 (NOVO) NOVO-NORDISK AS.  
 PI WO 9634963 A1 19961107 67p  
 AI WO 1996-US6097 19960501  
 PRAI US 1995-434255 19950503  
 DT Patent  
 LA English  
 OS 1996-506165 [50]  
 DESC Primer for BAN promoter amplification.

L8 ANSWER 34 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
 AN AAT85631 DNA DGENE  
 TI **Alkaline protease** nucleic acid coding sequence - used  
 to develop prods for use in detergents and for the recombinant expression  
 of polypeptide(s)  
 IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
 PA (NOVO) NOVO NORDISK BIOTECH INC.  
 (NOVO) NOVO-NORDISK AS.  
 PI WO 9634963 A1 19961107 67p  
 AI WO 1996-US6097 19960501  
 PRAI US 1995-434255 19950503  
 DT Patent  
 LA English  
 OS 1996-506165 [50]  
 DESC BAN promoter.

L8 ANSWER 35 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
 AN AAT85630 DNA DGENE  
 TI **Alkaline protease** nucleic acid coding sequence - used  
 to develop prods for use in detergents and for the recombinant expression  
 of polypeptide(s)  
 IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
 PA (NOVO) NOVO NORDISK BIOTECH INC.  
 (NOVO) NOVO-NORDISK AS.  
 PI WO 9634963 A1 19961107 67p  
 AI WO 1996-US6097 19960501  
 PRAI US 1995-434255 19950503  
 DT Patent  
 LA English  
 OS 1996-506165 [50]  
 DESC Primer for CryIIIA promoter amplification.

L8 ANSWER 36 OF 64 DGENE COPYRIGHT 2003 THOMSON DERWENT on STN  
 AN AAT85629 DNA DGENE  
 TI **Alkaline protease** nucleic acid coding sequence - used  
 to develop prods for use in detergents and for the recombinant expression  
 of polypeptide(s)  
 IN Sloma A P; Outtrup H; Dambmann C H G; Aaslyng D A  
 PA (NOVO) NOVO NORDISK BIOTECH INC.  
 (NOVO) NOVO-NORDISK AS.  
 PI WO 9634963 A1 19961107 67p  
 AI WO 1996-US6097 19960501  
 PRAI US 1995-434255 19950503  
 DT Patent  
 LA English  
 OS 1996-506165 [50]  
 DESC Primer for CryIIIA promoter amplification.

L8 ANSWER 37 OF 64 IFIPAT COPYRIGHT 2003 IFI on STN  
 AN 2571502 IFIPAT;IFIUDB;IFICDB  
 TI **ALKALINE PROTEASES** DERIVED FROM **BACILLUS**  
 PROTEOLYTICUS; A CULTURE PRODUCT POLYPEPTIDES AS AN ANTISOILANTS FOR  
 WASHING DETERGENT  
 INF Boyer, Ernest W, Elkhart, IN  
 Byng, Graham S, Woodinville, WA  
 IN Boyer Ernest W; Byng Graham S  
 PAF Solvay Enzymes, Inc, Houston, TX  
 PA Solvay Enzymes Inc (28411)  
 EXNAM Robinson, Douglas W  
 EXNAM Weber, Jon P  
 AG Willian Brinks Hofer Gilson & Lione  
 PI US 5385837 19950131 (CITED IN 003 LATER PATENTS)  
 AI US 1994-181872 19940113  
 XPD 18 May 2012  
 RLI US 1992-884184 19920518 CONTINUATION ABANDONED  
 FI US 5385837 19950131  
 DT UTILITY; REASSIGNED  
 FS CHEMICAL  
 GRANTED  
 CLMN 1

L8 ANSWER 38 OF 64 USPATFULL on STN  
 AN 2002:346797 USPATFULL  
 TI Method for in vivo production of a mutant library in cells  
 IN Borchert, Torben Vedel, Jyllinge, DENMARK  
 Ehrlich, Stanislas Dusko, Paris, FRANCE  
 PA Novozymes A/S, Bagsvaerd, DENMARK (non-U.S. corporation)  
 PI US 6500644 B1 20021231  
 AI US 2000-670798 20000926 (9)  
 RLI Continuation of Ser. No. US 1998-112410, filed on 8 Jul 1998, now  
 patented, Pat. No. US 6165718 Continuation of Ser. No. WO 1997-DK14,  
 filed on 1 Oct 1997  
 PRAI DK 1996-18 19960110  
 DT Utility  
 FS GRANTED  
 EXNAM Primary Examiner: Guzo, David  
 LREP Lambiris, Elias, Garbell, Jason  
 CLMN Number of Claims: 19  
 ECL Exemplary Claim: 1  
 DRWN 0 Drawing Figure(s); 0 Drawing Page(s)  
 LN.CNT 948  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 39 OF 64 USPATFULL on STN  
 AN 2002:194730 USPATFULL  
 TI Aminopeptidase derived from Bacillus licheniformis and process for  
 preparation of natural type proteins  
 IN Lee, Young-Phil, Taejon-si, KOREA, REPUBLIC OF  
 Han, Kyuboem, Taejon-si, KOREA, REPUBLIC OF  
 Kim, Se-Hoon, Taejon-si, KOREA, REPUBLIC OF  
 Park, Soon-Jae, Taejon-si, KOREA, REPUBLIC OF  
 Lee, Seung-Joo, Taejon-si, KOREA, REPUBLIC OF  
 PA LG Chemical Ltd., Seoul, KOREA, REPUBLIC OF (non-U.S. corporation)  
 PI US 6428997 B1 20020806  
 WO 9838290 19980903  
 AI US 1999-367940 19990818 (9)  
 WO 1998-KR32 19980216  
 19990818 PCT 371 date  
 PRAI KR 1997-6756 19970228

DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Achutamurthy, Ponnathapu; Assistant Examiner: Moore, William W.  
LREP Bachman & LaPointe, P.C.  
CLMN Number of Claims: 11  
ECL Exemplary Claim: 1  
DRWN 17 Drawing Figure(s); 12 Drawing Page(s)  
LN.CNT 1059  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 40 OF 64 USPATFULL on STN  
AN 2001:158239 USPATFULL  
TI Detergent composition containing wool compatible high **alkaline proteases**  
IN Baeck, Andre Cesar, Bonheiden, Belgium  
Verschuere, Ann Katrien Marie, Beernem, Belgium  
Busch, Alfred, Londerzeel, Belgium  
PA The Procter & Gamble Company, Cincinnati, OH, United States (U.S. corporation)  
PI US 6291414 B1 20010918  
AI US 1999-327118 19990607 (9)  
RLI Continuation of Ser. No. US 1996-750406, filed on 6 Dec 1996, now patented, Pat. No. US 5922082  
PRAI EP 1994-870096 19940616  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Fries, Kery  
LREP Cook, C. Brant, Zerby, Kim W., Miller, Steven W.  
CLMN Number of Claims: 7  
ECL Exemplary Claim: 1  
DRWN No Drawings  
LN.CNT 1165  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 41 OF 64 USPATFULL on STN  
AN 2001:33086 USPATFULL  
TI Enzymes for detergents  
IN Maurer, Karl-Heinz, Erkrath, Germany, Federal Republic of  
Weiss, Albrecht, Langenfeld, Germany, Federal Republic of  
Paech, Christian G., Daly City, CA, United States  
Goddette, Dean W., Chelmsford, MA, United States  
Christianson, Teresa M., Petaluma, CA, United States  
Tang, Maria R., Fairfield, CA, United States  
Wilson, Charles Ronald, Santa Rosa, CA, United States  
PA Henkel Kommanditgesellschaft Auf Aktien, Duesseldorf, Germany, Federal Republic of (non-U.S. corporation)  
PI US 6197589 B1 20010306  
AI US 1998-74331 19980507 (9)  
RLI Division of Ser. No. US 1995-566369, filed on 1 Dec 1995, now patented, Pat. No. US 5801039 Continuation of Ser. No. US 1994-201120, filed on 20 Feb 1994, now abandoned  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Achutamurthy, Ponnathapu; Assistant Examiner: Moore, William W.  
LREP Jaeschke, Wayne C., Murphy, Glenn E.J., Steen, Jeffrey S.  
CLMN Number of Claims: 63  
ECL Exemplary Claim: 1  
DRWN 9 Drawing Figure(s); 9 Drawing Page(s)  
LN.CNT 1376  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 42 OF 64 USPATFULL on STN  
AN 2000:174347 USPATFULL  
TI Method for in vivo production of a mutant library in cells  
IN Borchert, Torben Vedel, Jyllinge, Denmark  
Ehrlich, Stanislas Dusko, Paris, France  
PA Novo Nordisk A/S Novo Alle, Bagsvaerd, Denmark (non-U.S. corporation)  
PI US 6165718 20001226  
AI US 1998-112410 19980708 (9)  
RLI Continuation of Ser. No. WO 1997-DK14, filed on 10 Jan 1997  
PRAI DK 1996-18 19960110  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Guzo, David  
LREP Lambiris, Elias J., Gregg, Valeta  
CLMN Number of Claims: 12  
ECL Exemplary Claim: 1  
DRWN No Drawings  
LN.CNT 938  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 43 OF 64 USPATFULL on STN  
AN 1999:141662 USPATFULL  
TI **Alkaline protease**, process for the production  
thereof, use thereof, and microorganism producing the same  
IN Miyota, Yoshiaki, Chiba, Japan  
Fukuyama, Shiro, Chiba, Japan  
Yoneda, Tadashi, Chiba, Japan  
PA Novo Nordisk A/S, Bagsvaerd, Denmark (non-U.S. corporation)  
PI US 5981255 19991109  
WO 9716541 19970509  
AI US 1998-43722 19980325 (9)  
WO 1996-JP3216 19961101  
19980325 PCT 371 date  
19980325 PCT 102(e) date  
PRAI JP 1995-308493 19951102  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Achutamurthy, Ponnathapura; Assistant Examiner:  
Monshipouri, Maryam  
LREP Zelson, Esq., Steve T., Green, Esq., Reza  
CLMN Number of Claims: 11  
ECL Exemplary Claim: 1  
DRWN 7 Drawing Figure(s); 7 Drawing Page(s)  
LN.CNT 751  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 44 OF 64 USPATFULL on STN  
AN 1999:141642 USPATFULL  
TI Methods for isolating nucleic acids using **alkaline protease**  
IN Shultz, John, Verona, WI, United States  
Smith, Craig E., Oregon, WI, United States  
Storts, Douglas R., Madison, WI, United States  
Brisco, Paula, Oregon, WI, United States  
Frederiksen, Judy, Oregon, WI, United States  
Selman, Susanne, Madison, WI, United States  
Grosch, Josephine, Mazomanie, WI, United States  
PA Promega Corporation, Madison, WI, United States (U.S. corporation)  
PI US 5981235 19991109  
AI US 1996-681922 19960729 (8)  
DT Utility

FS Granted  
EXNAM Primary Examiner: Naff, David M.  
LREP Frenchick, Grady J. Michael Best & Friedrich LLP, King, Karen B.  
CLMN Number of Claims: 24  
ECL Exemplary Claim: 1  
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)  
LN.CNT 1570  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 45 OF 64 USPATFULL on STN  
AN 1999:78089 USPATFULL  
TI Detergent composition containing wool compatible high **alkaline proteases**  
IN Baeck, Andre Cesar, Bonheiden, Belgium  
Verschuere, Ann Katrien Marie Agnes, Beernem, Belgium  
Busch, Alfred, Londerzeel, Belgium  
PA Procter & Gamble Company, Cincinnati, OH, United States (U.S. corporation)  
PI US 5922082 19990713  
WO 9534627 19951221  
AI US 1996-750406 19961206 (8)  
WO 1995-US6481 19950523  
19961206 PCT 371 date  
19961206 PCT 102(e) date  
PRAI EP 1994-870096 19940616  
DT Utility  
FS Granted

EXNAM Primary Examiner: Fries, Kery  
LREP Cook, C. Brant, Zerby, Kim W., Rasser, Jacobus C.  
CLMN Number of Claims: 17  
ECL Exemplary Claim: 1  
DRWN No Drawings  
LN.CNT 1242  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 46 OF 64 USPATFULL on STN  
AN 1998:104612 USPATFULL  
TI Enzymes for detergents  
IN Maurer, Karl-Heinz, Erkrath, Germany, Federal Republic of  
Weiss, Albrecht, Langenfeld, Germany, Federal Republic of  
Paech, Christian G., Daly City, CA, United States  
Goddette, Dean W., Chelmsford, MA, United States  
Christianson, Teresa M., Petaluma, CA, United States  
Tang, Maria R., Fairfield, CA, United States  
Wilson, Charles Ronald, Santa Rosa, CA, United States  
PA Cognis Gesellschaft fuer Bio und Umwelttechnologie mbH, Duesseldorf, Germany, Federal Republic of (non-U.S. corporation)  
PI US 5801039 19980901  
AI US 1995-566369 19951201 (8)  
RLI Continuation of Ser. No. US 1994-201120, filed on 24 Feb 1994, now abandoned  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Wax, Robert A.; Assistant Examiner: Stole, Einar  
LREP Jaeschke, Wayne C., Drach, John E., Steen, Jeffrey S.  
CLMN Number of Claims: 70  
ECL Exemplary Claim: 1  
DRWN 9 Drawing Figure(s); 9 Drawing Page(s)  
LN.CNT 1908  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 47 OF 64 USPATFULL on STN

AN 96:94479 USPATFULL  
TI **Alkaline protease** from *Bacillus*  
proteolyticus species  
IN Boyer, Ernest W., Elkhart, IN, United States  
Byng, Graham S., Woodinville, WA, United States  
PA Solvay Enzymes, Inc., Elkhart, IN, United States (U.S. corporation)  
PI US 5565348 19961015  
AI US 1995-390570 19950217 (8)  
RLI Continuation of Ser. No. US 1994-180336, filed on 12 Jan 1994, now  
abandoned which is a division of Ser. No. US 1992-884184, filed on 18  
May 1992, now abandoned  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Naff, David M.; Assistant Examiner: Weber, Jon P.  
LREP McDermott, Will & Emery  
CLMN Number of Claims: 8  
ECL Exemplary Claim: 1  
DRWN No Drawings  
LN.CNT 807  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 48 OF 64 USPATFULL on STN  
AN 96:43570 USPATFULL  
TI *Bacillus proteolyticus* species which produce an **alkaline**  
**protease**  
IN Boyer, Ernest W., Elkhart, IN, United States  
Byng, Graham S., Woodinville, WA, United States  
PA Solvay Enzymes, Inc., Elkhart, IN, United States (U.S. corporation)  
PI US 5518917 19960521  
AI US 1994-180336 19940112 (8)  
RLI Division of Ser. No. US 1992-884184, filed on 18 May 1992, now abandoned  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Wityshyn, Michael G.; Assistant Examiner: Weber, Jon  
P.  
LREP Willian Brinks Hofer Gilson & Lione  
CLMN Number of Claims: 7  
ECL Exemplary Claim: 1  
DRWN No Drawings  
LN.CNT 821  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 49 OF 64 USPATFULL on STN  
AN 95:71269 USPATFULL  
TI Method of preparation of purified **alkaline protease**  
IN Shetty, Jayarama K., Elkhart, IN, United States  
Patel, Chimanbhai P., Mishawaka, IN, United States  
Nicholson, Mary Ann, Portage, MI, United States  
PA Solvay Enzymes, Inc., Houston, TX, United States (U.S. corporation)  
PI US 5439817 19950808  
AI US 1993-6484 19930121 (8)  
RLI Division of Ser. No. US 1991-813705, filed on 27 Dec 1991, now patented,  
Pat. No. US 5256557  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Robinson, Douglas W.  
LREP Willian Brinks Hofer Gilson & Lione  
CLMN Number of Claims: 7  
ECL Exemplary Claim: 1  
DRWN 9 Drawing Figure(s); 4 Drawing Page(s)  
LN.CNT 1092  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.



L8 ANSWER 50 OF 64 USPATFULL on STN  
 AN 95:60105 USPATFULL  
 TI Detergent and method for producing the same  
 IN Flower, David M., Grand Rapids, MI, United States  
 PA Amway Corporation, Ada, MI, United States (U.S. corporation)  
 PI US 5429765 19950704  
 AI US 1993-54962 19930429 (8)  
 DT Utility  
 FS Granted  
 EXNAM Primary Examiner: Lieberman, Paul; Assistant Examiner: Fries, Kery  
 LREP Price, Heneveld, Cooper, DeWitt & Litton  
 CLMN Number of Claims: 21  
 ECL Exemplary Claim: 1  
 DRWN 3 Drawing Figure(s); 3 Drawing Page(s)  
 LN.CNT 456  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 51 OF 64 USPATFULL on STN  
 AN 95:58042 USPATFULL  
 TI Alkaline bacillus lipases, coding DNA sequences therefor and bacilli,  
 which produce these lipases  
 IN Moeller, Bernhard, Hanover, Germany, Federal Republic of  
 Vetter, Roman, Burgdorf, Germany, Federal Republic of  
 Wilke, Detlef, Wennigsen, Germany, Federal Republic of  
 Foullois, Birgit, Hanover, Germany, Federal Republic of  
 PA Kali-Chemie Aktiengesellschaft, Hanover, Germany, Federal Republic of  
 (non-U.S. corporation)  
 PI US 5427936 19950627  
 WO 9116422 19911031  
 AI US 1992-930678 19921013 (7)  
 WO 1991-EP664 19910408  
 19921013 PCT 371 date  
 19921013 PCT 102(e) date  
 PRAI DE 1990-40120708 19900414  
 DT Utility  
 FS Granted  
 EXNAM Primary Examiner: Furman, Keith C.  
 LREP Evenson, McKeown, Edwards & Lenahan  
 CLMN Number of Claims: 7  
 ECL Exemplary Claim: 1  
 DRWN 18 Drawing Figure(s); 15 Drawing Page(s)  
 LN.CNT 1123  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 52 OF 64 USPATFULL on STN  
 AN 95:22827 USPATFULL  
 TI Multiply mutated subtilisins  
 IN Zukowski, Mark M., Thousand Oaks, CA, United States  
 Narhi, Linda O., Moorpark, CA, United States  
 Levitt, Michael, Stanford, CA, United States  
 PA Amgen Inc., Thousand Oaks, CA, United States (U.S. corporation)  
 PI US 5397705 19950314  
 AI US 1992-857714 19920325 (7)  
 RLI Continuation of Ser. No. US 1989-353124, filed on 17 May 1989, now  
 abandoned  
 DT Utility  
 FS Granted  
 EXNAM Primary Examiner: Wax, Robert A.; Assistant Examiner: Moore, William W.  
 LREP Crandall, Craig A., Chambers, Daniel M., Odre, Steven M.  
 CLMN Number of Claims: 17  
 ECL Exemplary Claim: 1

\* DRWN 10 Drawing Figure(s); 10 Drawing Page(s)  
LN.CNT 1606  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 53 OF 64 USPATFULL on STN  
AN 95:11536 USPATFULL  
TI **Alkaline protease** having stability in solution with  
anionic surfactant, method for producing the same, use thereof and  
microorganism producing the same  
IN Sawayanagi, Toyoji, Tokyo, Japan  
Saito, Mina, Tokyo, Japan  
Tsuzuki, Toshi, Tokyo, Japan  
Fujiwara, Yoshio, Tokyo, Japan  
Noguchi, Yoshitaka, Tokyo, Japan  
PA Showa Denko K.K., Tokyo, Japan (non-U.S. corporation)  
PI US 5387518 19950207  
AI US 1992-873168 19920424 (7)  
PRAI JP 1991-125457 19910426  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Robinson, Douglas W.; Assistant Examiner: Weber, Jon  
P.  
LREP Sughrue, Mion, Zinn, Macpeak & Seas  
CLMN Number of Claims: 3  
ECL Exemplary Claim: 1  
DRWN 8 Drawing Figure(s); 6 Drawing Page(s)  
LN.CNT 759  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 54 OF 64 USPATFULL on STN  
AN 94:42276 USPATFULL  
TI Protease  
IN Liu, Chi-Li, Danbury, CT, United States  
Beck, Carol M., Bethel, CT, United States  
Strobel, Jr., Robert J., Danbury, CT, United States  
Overholt, Janet M., Danbury, CT, United States  
PA Novo Nordisk A/S, Bagsvaerd, Denmark (non-U.S. corporation)  
PI US 5312748 19940517  
WO 8803947 19880602  
AI US 1988-223788 19880830 (7)  
WO 1987-DK144 19871125  
19880830 PCT 371 date  
19880830 PCT 102(e) date  
DCD 20070522  
PRAI DK 1986-5640 19861125  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Robinson, Douglas W.; Assistant Examiner: Ware,  
Deborah K.  
LREP Zelson, Steve T., Lambiris, Elias J.  
CLMN Number of Claims: 7  
ECL Exemplary Claim: 1  
DRWN 10 Drawing Figure(s); 6 Drawing Page(s)  
LN.CNT 583  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 55 OF 64 USPATFULL on STN  
AN 94:15651 USPATFULL  
TI Endoprotease from *Fusarium oxysporum* DSM 2672 for use in detergents  
IN Nielsen, Ruby I., Farum, Denmark  
Aaslyng, Dorrit A., Roskilde, Denmark  
Jensen, Georg W., Bagsvaerd, Denmark

PA Schneider, Palle, Ballerup, Denmark  
PI Novo Nordisk A/S, Bagsvaerd, Denmark (non-U.S. corporation)  
AI US 5288627 19940222  
RLI US 1992-977355 19921117 (7)  
PRAI Division of Ser. No. US 1990-536592, filed on 3 Jul 1990, now abandoned  
DK 1988-62 19880107  
DK 1988-63 19880107  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Naff, David M.; Assistant Examiner: Meller, Michael V.  
LREP Zelson, Steve T., Lambiris, Elias J.  
CLMN Number of Claims: 2  
ECL Exemplary Claim: 1  
DRWN 14 Drawing Figure(s); 14 Drawing Page(s)  
LN.CNT 542  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 56 OF 64 USPATFULL on STN  
AN 93:89565 USPATFULL  
TI Purified **alkaline protease** concentrate and method of preparation  
IN Shetty, Jayarama K., Elkhart, IN, United States  
Patel, Chimanbhai P., Mishawaka, IN, United States  
Nicholson, Mary A., Portazi, MI, United States  
PA Solvay Enzymes, Inc., Houston, TX, United States (U.S. corporation)  
PI US 5256557 19931026  
AI US 1991-813705 19911227 (7)  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Robinson, Douglas W.; Assistant Examiner: Sevigny, Jeffrey J.  
LREP Willian Brinks Olds Hofer Gilson & Lione  
CLMN Number of Claims: 8  
ECL Exemplary Claim: 1  
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)  
LN.CNT 1054  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 57 OF 64 USPATFULL on STN  
AN 90:40292 USPATFULL  
TI Proteolytic detergent additive and compositions containing the same  
IN Aaslyng, Dorrit A., Roskilde, Denmark  
Jensen, Georg W., Bagsvaerd, Denmark  
Schneider, Ib, Hellerup, Denmark  
Schneider, Palle, Ballerup, Denmark  
PA Novo Industri A/S, Bagsvaerd, Denmark (non-U.S. corporation)  
PI US 4927558 19900522  
WO 8803946 19880602  
AI US 1988-223787 19880831 (7)  
WO 1987-DK145 19871125  
19880831 PCT 371 date  
19880831 PCT 102(e) date  
PRAI DK 1986-5640 19861125  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Lieberman, Paul; Assistant Examiner: Beadles-Hay, A.  
LREP Fidelman, Morris, Wolffe, Franklin D.  
CLMN Number of Claims: 14  
ECL Exemplary Claim: 1  
DRWN 14 Drawing Figure(s); 14 Drawing Page(s)  
LN.CNT 650  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 58 OF 64 USPATFULL on STN  
 AN 90:25696 USPATFULL  
 TI Subtilisin analogs  
 IN Zukowski, Mark M., Thousand Oaks, CA, United States  
 Stabinsky, Yitzhak, Boulder, CO, United States  
 Levitt, Michael, London, England  
 PA Amgen, Inc., Thousand Oaks, CA, United States (U.S. corporation)  
 PI US 4914031 19900403  
 AI US 1987-36872 19870410 (7)  
 DT Utility  
 FS Granted  
 EXNAM Primary Examiner: Mays, Thomas D.  
 LREP Byrne, Thomas E., Odre, Steven M.  
 CLMN Number of Claims: 22  
 ECL Exemplary Claim: 1  
 DRWN 5 Drawing Figure(s); 5 Drawing Page(s)  
 LN.CNT 1208  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 59 OF 64 USPATFULL on STN  
 AN 89:2963 USPATFULL  
 TI **Alkaline proteases** and microorganisms producing same  
 IN Takeuchi, Keiji, Tokyo, Japan  
 Nishino, Takashi, Odawara, Japan  
 Odera, Motoyasu, Odawara, Japan  
 Shimogaki, Hisao, Minami-Ashigara, Japan  
 Negi, Tahee, Fujisawa, Japan  
 PA Lion Corporation, Tokyo, Japan (non-U.S. corporation)  
 PI US 4797362 19890110  
 AI US 1986-870018 19860603 (6)  
 PRAI JP 1985-123021 19850606  
 JP 1985-123022 19850606  
 JP 1985-286944 19851220  
 DT Utility  
 FS Granted  
 EXNAM Primary Examiner: Wiseman, Thomas G.; Assistant Examiner: Patterson, Jr., Charles L.  
 LREP Burns, Doane, Swecker & Mathis  
 CLMN Number of Claims: 11  
 ECL Exemplary Claim: 1  
 DRWN 23 Drawing Figure(s); 23 Drawing Page(s)  
 LN.CNT 1212  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 60 OF 64 USPATFULL on STN  
 AN 87:43327 USPATFULL  
 TI Process to solubilize enzymes and an enzyme liquid product produced thereby  
 IN Brothers, Charles E., Cassopolis, MI, United States  
 Kim, Chong Y., Elkhart, IN, United States  
 PA Miles Laboratories, Inc., Elkhart, IN, United States (U.S. corporation)  
 PI US 4673647 19870616  
 AI US 1985-730864 19850506 (6)  
 DT Utility  
 FS Granted  
 EXNAM Primary Examiner: Shapiro, Lionel M.  
 LREP Gray, Edward P., Skord, Jennifer L.  
 CLMN Number of Claims: 29  
 ECL Exemplary Claim: 1  
 DRWN No Drawings  
 LN.CNT 581

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 61 OF 64 USPATFULL on STN  
AN 84:60989 USPATFULL  
TI **Alkaline protease** and preparation method thereof  
IN Ichishima, Fiji, Fuchu, Japan  
Onouchi, Takashi, Tokyo, Japan  
PA Showa Denko Kabushiki Kaisha, Tokyo, Japan (non-U.S. corporation)  
PI US 4480037 19841030  
AI US 1983-465064 19830208 (6)  
PRAI JP 1982-17596 19820208  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Shapiro, Lionel M.  
LREP Sughrue, Mion, Zinn, Macpeak & Seas  
CLMN Number of Claims: 2  
ECL Exemplary Claim: 1  
DRWN 6 Drawing Figure(s); 4 Drawing Page(s)  
LN.CNT 673  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 62 OF 64 WPINDEX COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 1992-366250 [44] WPINDEX  
DNC C1992-162669  
TI New **alkaline protease** from **Bacillus** species  
JP 395 - useful in detergent compsns. and stable in presence of bleach.  
DC D16 D25  
IN AASLYNG, D A; CHRISTIANSEN, M; DAMBMANN, C; OUTTRUP, H  
PA (NOVO) NOVO-NORDISK AS; (NOVO) NOVOZYMES AS; (NOVO) NOVO NORDISK AS  
CYC 19  
PI WO 9217578 A1 19921015 (199244)\* EN 18p  
RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE  
W: FI JP KR US  
FI 9304333 A 19931001 (199351)  
EP 580656 A1 19940202 (199405) EN  
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE  
JP 06506354 W 19940721 (199433) 6p  
US 5466594 A 19951114 (199551) 6p  
KR 245618 B1 20000215 (200118)  
EP 580656 B1 20011024 (200169) EN  
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE  
DE 69232152 E 20011129 (200202)  
ADT WO 9217578 A1 WO 1992-DK105 19920403; FI 9304333 A WO 1992-DK105 19920403,  
FI 1993-4333 19931001; EP 580656 A1 EP 1992-908125 19920403, WO 1992-DK105  
19920403; JP 06506354 W JP 1992-507969 19920403, WO 1992-DK105 19920403;  
US 5466594 A WO 1992-DK105 19920403, US 1993-119193 19930923; KR 245618 B1  
WO 1992-DK105 19920403, KR 1993-702923 19930927; EP 580656 B1 EP  
1992-908125 19920403, WO 1992-DK105 19920403; DE 69232152 E DE 1992-632152  
19920403, EP 1992-908125 19920403, WO 1992-DK105 19920403  
FDT EP 580656 A1 Based on WO 9217578; JP 06506354 W Based on WO 9217578; US  
5466594 A Based on WO 9217578; EP 580656 B1 Based on WO 9217578; DE  
69232152 E Based on EP 580656, Based on WO 9217578  
PRAI DK 1991-585 19910403

L8 ANSWER 63 OF 64 WPINDEX COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 1992-366249 [44] WPINDEX  
DNC C1992-162668  
TI **Alkaline protease** from **Bacillus** species  
TY145 - useful in detergent compsns. with high cost performance ratio, for  
low temp. washing conditions.  
DC D16 D25  
IN DAMBMANN, C; LINDEGAARD, P; OUTTRUP, H

PA (NOVO) NOVO-NORDISK AS; (NOVO) NOVOZYMES AS; (NOVO) NOVO NORDISK AS  
CYC 19  
PI WO 9217577 A1 19921015 (199244)\* EN 17p  
RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE  
W: FI JP KR US  
FI 9304332 A 19931001 (199351)  
EP 578719 A1 19940119 (199403) EN  
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE  
JP 06506353 W 19940721 (199433) 6p  
US 5362414 A 19941108 (199444) 6p  
EP 578719 B1 19950705 (199531) EN 10p  
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE  
DE 69203345 E 19950810 (199537)  
ES 2074360 T3 19950901 (199541)  
JP 3042715 B2 20000522 (200029) 5p  
KR 245617 B1 20000215 (200118)  
FI 110436 B1 20030131 (200319)  
ADT WO 9217577 A1 WO 1992-DK104 19920403; FI 9304332 A WO 1992-DK104 19920403,  
FI 1993-4332 19931001; EP 578719 A1 EP 1992-908307 19920403, WO 1992-DK104  
19920403; JP 06506353 W JP 1992-507968 19920403, WO 1992-DK104 19920403;  
US 5362414 A WO 1992-DK104 19920403, US 1993-107689 19930818; EP 578719 B1  
EP 1992-908307 19920403, WO 1992-DK104 19920403; DE 69203345 E DE  
1992-603345 19920403, EP 1992-908307 19920403, WO 1992-DK104 19920403; ES  
2074360 T3 EP 1992-908307 19920403; JP 3042715 B2 JP 1992-507968 19920403,  
WO 1992-DK104 19920403; KR 245617 B1 WO 1992-DK104 19920403, KR  
1993-702892 19930925; FI 110436 B1 WO 1992-DK104 19920403, FI 1993-4332  
19931001  
FDT EP 578719 A1 Based on WO 9217577; JP 06506353 W Based on WO 9217577; US  
5362414 A Based on WO 9217577; EP 578719 B1 Based on WO 9217577; DE  
69203345 E Based on EP 578719, Based on WO 9217577; ES 2074360 T3 Based on  
EP 578719; JP 3042715 B2 Previous Publ. JP 06506353, Based on WO 9217577;  
FI 110436 B1 Previous Publ. FI 9304332  
PRAI DK 1991-584 19910403  
L8 ANSWER 64 OF 64 WPINDEX COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 1992-366248 [44] WPINDEX  
DNC C1992-162667  
TI **Alkaline protease** from **Bacillus** species  
JA16-38A - useful in detergent compsns. with high cost performance ratio,  
for low temp. washing.  
DC D16 D25  
IN AASLYNG, D A; DAMBMANN, C; OUTTRUP, H  
PA (NOVO) NOVO-NORDISK AS; (NOVO) NOVOZYMES AS; (NOVO) NOVO NORDISK AS  
CYC 19  
PI WO 9217576 A1 19921015 (199244)\* EN 19p  
RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE  
W: FI JP KR US  
FI 9304331 A 19931001 (199351)  
EP 578712 A1 19940119 (199403) EN  
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE  
JP 06506352 W 19940721 (199433) 6p  
US 5650315 A 19970722 (199735) 6p  
EP 578712 B1 19990707 (199931) EN  
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE  
DE 69229545 E 19990812 (199938)  
KR 245614 B1 20000215 (200118)  
FI 110435 B1 20030131 (200319)  
ADT WO 9217576 A1 WO 1992-DK103 19920403; FI 9304331 A WO 1992-DK103 19920403,  
FI 1993-4331 19931001; EP 578712 A1 EP 1992-908100 19920403, WO 1992-DK103  
19920403; JP 06506352 W JP 1992-507967 19920403, WO 1992-DK103 19920403;  
US 5650315 A WO 1992-DK103 19920403, US 1993-107687 19930818; EP 578712 B1  
EP 1992-908100 19920403, WO 1992-DK103 19920403; DE 69229545 E DE

1992-629545 19920403, EP 1992-908100 19920403, WO 1992-DK103 19920403; KR  
245614 B1 WO 1992-DK103 19920403, KR 1993-702874 19930924; FI 110435 B1 WO  
1992-DK103 19920403, FI 1993-4331 19931001  
FDT EP 578712 A1 Based on WO 9217576; JP 06506352 W Based on WO 9217576; US  
5650315 A Based on WO 9217576; EP 578712 B1 Based on WO 9217576; DE  
69229545 E Based on EP 578712, Based on WO 9217576; FI 110435 B1 Previous  
Publ. FI 9304331  
PRAI DK 1991-583 19910403

=>

<-----User Break----->

=> d 18 3 5 6 7 8 10 12 13 16 37 47 48 62 63 64 bib ab

L8 ANSWER 3 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 2003:212619 CAPLUS  
DN 139:67825  
TI Novel **alkaline proteases** from alkalophilic bacteria  
grown on chicken feather  
AU Gessesse, Amare; Hatti-Kaul, Rajni; Gashe, Berhanu A.; Mattiasson, Bo  
CS Institute of Life Sciences, Department of Biotechnology, Aalborg  
University, Aalborg, DK-9000, Den.  
SO Enzyme and Microbial Technology (2003), 32(5), 519-524  
CODEN: EMTED2; ISSN: 0141-0229  
PB Elsevier Science Inc.  
DT Journal  
LA English  
AB Two **alk. protease** producing alkalophilic bacterial  
strains, designated as AL-20 and AL-89, were isolated from a naturally  
occurring alk. habitat. The 2 strains were identified as Nesterenkonia  
sp. and Bacillus pseudofirmus, resp. Both strains grew and produced  
**alk. protease** using feather as the sole source of C and  
N. The addn. of 0.5% glucose to the feather medium increased protease  
prodn. by B. pseudofirmus AL-89 and suppressed enzyme prodn. by  
Nesterenkonia sp. AL-20. The enzymes from both organisms were purified to  
electrophoretic homogeneity following (NH4)2SO4 pptn., and ion-exchange,  
hydrophobic-interaction, and gel-filtration chromatogs. The **mol**  
. **wt.**, detd. using SDS-PAGE, was 23 **kDa** for protease  
AL-20 and 24 **kDa** for protease AL-89. Protease AL-20 was active  
in a broad pH range displaying >90% of its max. activity at pH 7.5-11.5  
with a peak at pH 10. The enzyme was unique in that unlike all other  
microbial serine proteases known so far, it did not require Ca2+ for  
activity and thermal stability. Its optimum temp. for activity was  
70.degree. and it was stable after 1 h incubation at 65.degree. both in  
the presence and absence of Ca2+. These properties make protease AL-20 an  
ideal candidate for detergent application. Protease AL-89 on the other  
hand required Ca2+ for activity and stability at temps. of >50.degree..  
Its optimum activity was at 60 and 70.degree. in the absence and presence  
of Ca2+, resp. It displayed a pH optimum of 11 and retained .apprx.70% or  
more of its original activity at pH 6.5-11. B. pseudofirmus AL-89, and  
the protease it produce offers an interesting potential for the enzymic  
and/or microbiol. hydrolysis of feather to be used as animal feed  
supplement.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1997:757111 CAPLUS  
DN 128:20054  
TI Cold-active **alkaline proteases** of microbial origins  
and their use for preparing detergent and processing food

IN Takaiwa, Mikio; Saeki, Katsuhisa; Okuda, Mitsuyoshi; Kobayashi, Toru; Ito, Susumu; Kubota, Hiromi; Ota, Yasuhiko; Fujimori, Naoko  
 PA Kao Corporation, Japan; Takaiwa, Mikio; Saeki, Katsuhisa; Okuda, Mitsuyoshi; Kobayashi, Toru; Ito, Susumu; Kubota, Hiromi; Ota, Yasuhiko; Fujimori, Naoko  
 SO PCT Int. Appl., 109 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9743406	A1	19971120	WO 1997-JP1555	19970509
	W: CN, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	JP 09299083	A2	19971125	JP 1996-116094	19960510
	JP 09299080	A2	19971125	JP 1996-116095	19960510
	JP 09299084	A2	19971125	JP 1996-116096	19960510
	JP 09299081	A2	19971125	JP 1996-116097	19960510
	JP 09299082	A2	19971125	JP 1996-116098	19960510
PRAI	JP 1996-116094		19960510		
	JP 1996-116095		19960510		
	JP 1996-116096		19960510		
	JP 1996-116097		19960510		
	JP 1996-116098		19960510		

AB Several cold-active **alk. protease** that have an pH optimum of 9.apprx.11, that are active in a temp. of 0.apprx.50.degree. and a wide pH range, and that are resistant to most surfactants are disclosed. Cold-active **alk. protease** T15 was prepd. from the culture of Bacillus strain KSM-T15 and characterized. The enzyme exhibits a pH optimum 11 (active in the range of 5.apprx.12), temp. optimum 28.apprx.32.degree., and **mol. wt.** 37,000.+-.1000 by SDS-PAGE. Prepn. and characterization of cold-active **alk. protease** S, T61, T16, X from other microorganisms were also described. Use of the proteases for prepg. detergent compns. and processing food is claimed.

L8 ANSWER 6 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1995:943601 CAPLUS  
 DN 123:333762  
 TI Preparation of **alkaline protease** with **Bacillus** strain TS50093

IN Nobiki, Masayoshi; Fujiwara, Yoshio; Ichijima, Eiji; Yamagata, Yohei  
 PA Showa Denko Kk, Japan  
 SO Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07236482	A2	19950912	JP 1994-54613	19940228
PRAI	JP 1994-54613		19940228		

AB A novel **alk. protease** is isolated from the culture of Bacillus strain TS50093 and characterized. The enzyme exhibits a pH optimum 11-11.5, a temp. optimum 55.degree., a **mol. wt.** . by SDS-PAGE 29,000.+-.1,000, and pI 9.4-9.5. Its 49 N-terminal amino acid residues are also disclosed. The enzyme is stable in the presence of surfactants and therefore is suitable for the prepn. of detergents.

L8 ANSWER 7 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1995:677354 CAPLUS



DN 123:78432  
TI A novel **alkaline protease** of **Bacillus**  
THS-1001 and its coding gene  
IN Ichijima, Eiji; Yamagata, Yohei  
PA Showa Denko Kk, Japan  
SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 07095882	A2	19950411	JP 1993-263139	19930928
PRAI	JP 1993-263139		19930928		

AB The gene encoding a novel **alk. protease** is isolated from **Bacillus** THS-1001. Th enzyme isolated from **Bacillus** THS-1001 exhibits a pH optimum 9.5-10.5, temp. optimum 50.degree., pI >11, and **mol. wt.** 299,000 (SDS-PAGE). The enzyme is able to degrade Suc-Leu-Leu-Val-Tyr-MCA. The enzyme can be used for the prepn. of detergent.

L8 ANSWER 8 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1994:624989 CAPLUS

DN 121:224989

TI Preparation of **alkaline protease** K-16M with **Bacillus**  
and use in detergents

IN Kobayashi, Tooru; Hakamata, Yoshihiro; Hitomi, Jun; Kawai, Shuji; Ito, Susumu

PA Kao Corp, Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05308967	A2	19931122	JP 1992-141032	19920507
	JP 7908933	B2	19990623		
PRAI	JP 1992-141032		19920507		

AB A novel **alk. protease** K-16M suitable in detergent prepn. was isolated from the culture of **Bacillus** KSM-K16. The enzyme exhibited a pH optimum of 11.0-12.3, a temp. optimum of 55.degree., and a **mol. wt.** of 28,000 (SDS-PAGE), and was stable in the presence of a wide variety of surfactants.

L8 ANSWER 10 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
AN 1994:528754 CAPLUS

DN 121:128754

TI Preparation of **alkaline protease** of **Bacillus**  
and its use for detergent

IN Ichijima, Eiji; Yamagata, Yohei

PA Showa Denko Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06070765	A2	19940315	JP 1992-296360	19921008
PRAI	JP 1992-207302		19920710		

AB A surfactant-safe **alk. protease** of **Bacillus**

NKS-21 is prepd. with transgenic Escherichia coli and used for the prepn. of laundry detergent. The enzyme exhibits a pH optimum >11, a temp. optimum 50.degree., and pI <2.8. Its mol. wt. estd. by SDS-PAGE is 37,000. The gene encoding the enzyme and the deduced amino acid sequence are also disclosed.

L8 ANSWER 12 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1994:128511 CAPLUS  
 DN 120:128511  
 TI Novel **alkaline proteases** from **Bacillus** and  
 their manufacture for laundry detergents  
 IN Boyer, Ernest W.; Byng, Graham S.  
 PA Solvay Enzymes, Inc., USA  
 SO Eur. Pat. Appl., 16 pp.  
 CODEN: EPXXDW

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 571014	A1	19931124	EP 1993-201288	19930506
	R: BE, DE, DK, FR, NL				
	JP 06078768	A2	19940322	JP 1993-116028	19930518
	US 5518917	A	19960521	US 1994-180336	19940112
	US 5385837	A	19950131	US 1994-181872	19940113
	US 5565348	A	19961015	US 1995-390570	19950217
PRAI	US 1992-884184		19920518		
	US 1994-180336		19940112		

AB Novel **alk. proteases** derived from novel isolates of **Bacillus** are described. These **alk. proteinases** are manufd. for use in laundry detergents by cultivation of the microorganism. Alkalophilic bacteria were isolated from soil and screened for accumulation of an **alk. proteinase** by halo test and proteinase producers were then screened for growth at 57.degree.. An isolate of **Bacillus proteolyticus** was obtained from this screen and used for manuf. of enough of the proteinase for characterization. The enzyme was obtained from culture supernatants clarified by centrifugation and flocculation by dialysis, ion-exchange, and Cibacron Blue chromatog. The enzyme has a mol. wt. of 28 kDa, a pI of 11.1 and a specific activity of 26.5 APU/mg protein. The enzyme was significantly more stable in a heavy duty liq. detergent than enzyme A of **B. licheniformis**: the novel enzyme retained 55% of its activity after 11 days in a formulation in which enzyme A retained 15% of its activity. The enzyme was also more effective at soil removal under std. test conditions than enzyme A.

L8 ANSWER 13 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1993:423681 CAPLUS  
 DN 119:23681  
 TI A novel **alkaline protease** produced by **Bacillus**  
 and its use in washing compositions  
 IN Hsiao, Hung Yu; Fodge, Douglas W.; Lalonde, James J.  
 PA Chemgen Corp., USA; Vista Chemical Co.  
 SO PCT Int. Appl., 57 pp.  
 CODEN: PIXXD2

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9307276	A1	19930415	WO 1992-US8341	19921007
	W: AU, BG, BR, CA, CS, FI, HU, JP, KR, NO, PL, RO, RU				

RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE  
 US 5275945 A 19940104 US 1991-772087 19911008  
 AU 9227909 A1 19930503 AU 1992-27909 19921007  
 PRAI US 1991-772087 19911008  
 WO 1992-US8341 19921007

AB An **alk. proteinase** which retains .gtoreq.50% of its activity after 12 h at 52.degree. in a stabilized aq. detergent compn. of pH 9.8 was isolated from a novel Bacillus strain. **Alk. proteinase** 164A was isolated from a Bacillus strain isolated from alk. soil samples collected around linear alkylbenzenesulfonate storage vessels and loading docks. The proteinase had an optimal pH of 11, an optimal temp. of 65.degree., a mol. wt. of 27,600, and a pI of 7.4. It displayed high resistance to oxidn. by bleaches and improved detergency when blended with heavy-duty detergent liqs. The amino acid sequence of 164A and of the gene encoding it were detd.

L8 ANSWER 16 OF 64 CAPLUS COPYRIGHT 2003 ACS on STN  
 AN 1991:654327 CAPLUS

DN 115:254327

TI Thermostable **alkaline protease** manufacture with **Bacillus** for laundry detergents

IN Sawayanagi, Toyoji; Saito, Mina; Tsuzuki, Satoshi; Suzuki, Takashi; Tsumita, Yasuo

PA Showa Denko K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03191781	A2	19910821	JP 1989-330069	19891220
	JP 2882652	B2	19990412		
PRAI	JP 1989-330069		19891220		

AB The thermostable **alk. protease** (I) resistant to anionic detergents and having a mol. wt. of 46,000 dalton (by SDSPAGE) is manufd. by culturing Bacillus SD521. Bacillus SD521 was shake-cultured in a medium of maltose, soybean lees, and salts for 26 h at 35.degree.. After filtration, a filtrate having I activity of 85 nkatal/mL was obtained. Further purifn. of I by (NH4)2SO4 pptn. and chromatogs. was shown. Also given were the enzymic characteristics of I and physiol. and morphol. characteristics of Bacillus SD521.

L8 ANSWER 37 OF 64 IFIPAT COPYRIGHT 2003 IFI on STN  
 AN 2571502 IFIPAT;IFIUDB;IFICDB

TI **ALKALINE PROTEASES** DERIVED FROM **BACILLUS** PROTEOLYTICUS; A CULTURE PRODUCT POLYPEPTIDES AS AN ANTISOILANTS FOR WASHING DETERGENT

INF Boyer, Ernest W, Elkhart, IN  
 Byng, Graham S, Woodinville, WA

IN Boyer Ernest W; Byng Graham S

PAF Solvay Enzymes, Inc, Houston, TX

PA Solvay Enzymes Inc (28411)

EXNAM Robinson, Douglas W

EXNAM Weber, Jon P

AG Willian Brinks Hofer Gilson & Lione

PI US 5385837 19950131 (CITED IN 003 LATER PATENTS)

AI US 1994-181872 19940113

XPD 18 May 2012

RLI US 1992-884184 19920518 CONTINUATION

FI US 5385837 19950131

ABANDONED

DT UTILITY; REASSIGNED

FS CHEMICAL  
GRANTED  
CLMN 1  
AB **Alkaline proteases** derived from specific bacteria of the species *Bacillus proteolyticus* have enhanced stability and improved washing ability when blended in general detergents. Also disclosed are new bacteria producing these **alkaline proteases**. Additionally, there is also disclosed a process for the production of the **alkaline proteases** which comprises cultivating new bacteria and **detergent** compositions containing these **alkaline proteases**.

L8 ANSWER 47 OF 64 USPATFULL on STN  
AN 96:94479 USPATFULL  
TI **Alkaline protease** from *Bacillus* ~~proteolyticus~~ species *proteolyticus* species  
IN Boyer, Ernest W., Elkhart, IN, United States  
Byng, Graham S., Woodinville, WA, United States  
PA Solvay Enzymes, Inc., Elkhart, IN, United States (U.S. corporation)  
PI US 5565348 19961015  
AI US 1995-390570 19950217 (8)  
RLI Continuation of Ser. No. US 1994-180336, filed on 12 Jan 1994, now abandoned which is a division of Ser. No. US 1992-884184, filed on 18 May 1992, now abandoned  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Naff, David M.; Assistant Examiner: Weber, Jon P.  
LREP McDermott, Will & Emery  
CLMN Number of Claims: 8  
ECL Exemplary Claim: 1  
DRWN No Drawings  
LN.CNT 807

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An **alkaline protease** which is suitable for detergent formulations is produced by three strains of a species of *Bacillus proteolyticus*. The **alkaline protease** has the amino acid terminal sequence of Seq. ID NO.: 1 as follows: Ala-Gln-Ser-Val-Pro-Trp-Gly-Ile-Ser-Arg-Val-Gln-Ala-Pro-Ala-Ala-His-Asn-Arg-Gly-. In addition, the **alkaline protease** has a **molecular weight** of 28 kdaltons, an isoelectric point from 10-11.5, an optimum pH for proteolytic activity at a pH in the range of 8.5 and 11.5, and retains at least 70% of its original activity after being held at a pH of 8.0 at a temperature of 43.degree. C. for a period of 11 days.

L8 ANSWER 48 OF 64 USPATFULL on STN  
AN 96:43570 USPATFULL  
TI *Bacillus proteolyticus* species which produce an **alkaline protease**  
IN Boyer, Ernest W., Elkhart, IN, United States  
Byng, Graham S., Woodinville, WA, United States  
PA Solvay Enzymes, Inc., Elkhart, IN, United States (U.S. corporation)  
PI US 5518917 19960521  
AI US 1994-180336 19940112 (8)  
RLI Division of Ser. No. US 1992-884184, filed on 18 May 1992, now abandoned  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Wityshyn, Michael G.; Assistant Examiner: Weber, Jon P.  
LREP Willian Brinks Hofer Gilson & Lione  
CLMN Number of Claims: 7  
ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 821

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Three strains of a species of *Bacillus proteolyticus* are provided. This bacterium produces an **alkaline protease** which is suitable for **detergent** formulations. The **alkaline protease** has the amino acid terminal sequence of Seq. ID NO.: 1 as follows: Ala-Gln-Ser-Val-Pro-Trp-Gly-Ile-Ser-Arg-Val-Gln-Ala-Pro-Ala-Ala-His-Asn-Arg-Gly-. In addition, the **alkaline protease** has a **molecular weight** of 28 kdaltons, an isoelectric point from 10-11.5, an optimum pH for proteolytic activity at a pH in the range of 8.5 and 11.5, and retains at least 70% of its original activity after being held at a pH of 8.0 at a temperature of 43.degree. C. for a period of 11 days.

L8 ANSWER 62 OF 64 WPINDEX COPYRIGHT 2003 THOMSON DERWENT on STN

AN 1992-366250 [44] WPINDEX

DNC C1992-162669

TI New **alkaline protease** from *Bacillus* species

JP 395 - useful in detergent compsns. and stable in presence of bleach.

DC D16 D25

IN AASLYNG, D A; CHRISTIANSEN, M; DAMBMANN, C; OUTTRUP, H

PA (NOVO) NOVO-NORDISK AS; (NOVO) NOVOZYMES AS; (NOVO) NOVO NORDISK AS

CYC 19

PI WO 9217578 A1 19921015 (199244)\* EN 18p

RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE

W: FI JP KR US

FI 9304333 A 19931001 (199351)

EP 580656 A1 19940202 (199405) EN

R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE

JP 06506354 W 19940721 (199433) 6p

US 5466594 A 19951114 (199551) 6p

KR 245618 B1 20000215 (200118)

EP 580656 B1 20011024 (200169) EN

R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE

DE 69232152 E 20011129 (200202)

ADT WO 9217578 A1 WO 1992-DK105 19920403; FI 9304333 A WO 1992-DK105 19920403, FI 1993-4333 19931001; EP 580656 A1 EP 1992-908125 19920403, WO 1992-DK105 19920403; JP 06506354 W JP 1992-507969 19920403, WO 1992-DK105 19920403; US 5466594 A WO 1992-DK105 19920403, US 1993-119193 19930923; KR 245618 B1 WO 1992-DK105 19920403, KR 1993-702923 19930927; EP 580656 B1 EP 1992-908125 19920403, WO 1992-DK105 19920403; DE 69232152 E DE 1992-632152 19920403, EP 1992-908125 19920403, WO 1992-DK105 19920403

FDT EP 580656 A1 Based on WO 9217578; JP 06506354 W Based on WO 9217578; US 5466594 A Based on WO 9217578; EP 580656 B1 Based on WO 9217578; DE 69232152 E Based on EP 580656, Based on WO 9217578

PRAI DK 1991-585 19910403

AB WO 9217578 A UPAB: 19931006

New **alkaline protease** (I) has the following properties: (1) apparent **mol. wt.** 30 kD; (2) isoelectric point above 9.5; (3) **pH optimum** at 9-11 925degC); (4) temp. optimum 50-65degC (at pH 9.5); (5) immunochemical properties (partially) identical with those of a **protease** from *Bacillus* sp. JP395, NCIMB 40337.

Also new is an isolated, biologically pure culture of *Bacillus* Sp. JP395.

(I) is derived from the new *Bacillus*, esp. strain NCIMB 40337, or its mutants or variants.

(I) is made by culturing the new *Bacillus* on a conventional nutrient medium under aerobic conditions. Since the new *Bacillus* cannot grow below pH8, culture must be under alkaline conditions. Enzyme concentrates are recovered e.g by removing coarse material, low temp. evapn. or reverse

osmosis, then opt. adding preservatives. Solid enzyme preps are made by pptn. with Salts or Solvents or by Spray-drying.

(I) is stable for 60 min at 40degC under washing conditions, with or without bleaches. USE - (I) is useful in detergent compsns.

0/2

L8 ANSWER 63 OF 64 WPINDEX COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 1992-366249 [44] WPINDEX  
DNC C1992-162668  
TI **Alkaline protease** from **Bacillus** species  
TY145 - useful in detergent compsns. with high cost performance ratio, for low temp. washing conditions.  
DC D16 D25  
IN DAMBMANN, C; LINDEGAARD, P; OUTTRUP, H  
PA (NOVO) NOVO-NORDISK AS; (NOVO) NOVOZYMES AS; (NOVO) NOVO NORDISK AS  
CYC 19  
PI WO 9217577 A1 19921015 (199244)\* EN 17p  
RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE  
W: FI JP KR US  
FI 9304332 A 19931001 (199351)  
EP 578719 A1 19940119 (199403) EN  
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE  
JP 06506353 W 19940721 (199433) 6p  
US 5362414 A 19941108 (199444) 6p  
EP 578719 B1 19950705 (199531) EN 10p  
R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE  
DE 69203345 E 19950810 (199537)  
ES 2074360 T3 19950901 (199541)  
JP 3042715 B2 20000522 (200029) 5p  
KR 245617 B1 20000215 (200118)  
FI 110436 B1 20030131 (200319)  
ADT WO 9217577 A1 WO 1992-DK104 19920403; FI 9304332 A WO 1992-DK104 19920403, FI 1993-4332 19931001; EP 578719 A1 EP 1992-908307 19920403, WO 1992-DK104 19920403; JP 06506353 W JP 1992-507968 19920403, WO 1992-DK104 19920403; US 5362414 A WO 1992-DK104 19920403, US 1993-107689 19930818; EP 578719 B1 EP 1992-908307 19920403, WO 1992-DK104 19920403; DE 69203345 E DE 1992-603345 19920403, EP 1992-908307 19920403, WO 1992-DK104 19920403; ES 2074360 T3 EP 1992-908307 19920403; JP 3042715 B2 JP 1992-507968 19920403, WO 1992-DK104 19920403; KR 245617 B1 WO 1992-DK104 19920403, KR 1993-702892 19930925; FI 110436 B1 WO 1992-DK104 19920403, FI 1993-4332 19931001  
FDT EP 578719 A1 Based on WO 9217577; JP 06506353 W Based on WO 9217577; US 5362414 A Based on WO 9217577; EP 578719 B1 Based on WO 9217577; DE 69203345 E Based on EP 578719, Based on WO 9217577; ES 2074360 T3 Based on EP 578719; JP 3042715 B2 Previous Publ. JP 06506353, Based on WO 9217577; FI 110436 B1 Previous Publ. FI 9304332  
PRAI DK 1991-584 19910403  
AB WO 9217577 A UPAB: 19931006  
Protease (I) has the following properties (1) apparent mol. wt. 38 PrD; (2) isoelectric pt. about 8.8; (3) pH optimum at 8-11 (25degC); (4) temp. optimum 45-55degC (pH 9.5) and (5) immunochemical properties (partially) identical to those of a **protease** from **Bacillus** Sp. TY145, NCIMB 40339. Also new is an isolated, biologically pure culture of **Bacillus** sp. TY145. Pref. (I) is derived from the new **Bacillus**, specifically strain NCIMNB 40339 or mutants or variants.  
Pref. prepn comprises culturing the new **Bacillus** on a standard alkaline pH (e.g. pH9). Enzyme conc can be recovered e.g. by removing coarse material, low temp. evapn. or reverse osmosis, then opt. adding preservatives. Solid enzyme preps are made e.g. by pptn. with salts or solvents, or by Spray-drying.  
USE/ADVANTAGE - Cost-performance ratio.

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L8 ANSWER 64 OF 64 WPINDEX COPYRIGHT 2003 THOMSON DERWENT on STN  
AN 1992-366248 [44] WPINDEX  
DNC C1992-162667

TI **Alkaline protease** from **Bacillus** species  
JA16-38A - useful in detergent compsns. with high cost performance ratio,  
for low temp. washing.

DC D16 D25

IN AASLYNG, D A; DAMBMANN, C; OUTTRUP, H

PA (NOVO) NOVO-NORDISK AS; (NOVO) NOVOZYMES AS; (NOVO) NOVO NORDISK AS

CYC 19

PI WO 9217576 A1 19921015 (199244)\* EN 19p  
RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE  
W: FI JP KR US

FI 9304331 A 19931001 (199351)

EP 578712 A1 19940119 (199403) EN

R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE

JP 06506352 W 19940721 (199433) 6p

US 5650315 A 19970722 (199735) 6p

EP 578712 B1 19990707 (199931) EN

R: AT BE CH DE DK ES FR GB GR IT LI LU NL SE

DE 69229545 E 19990812 (199938)

KR 245614 B1 20000215 (200118)

FI 110435 B1 20030131 (200319)

ADT WO 9217576 A1 WO 1992-DK103 19920403; FI 9304331 A WO 1992-DK103 19920403,  
FI 1993-4331 19931001; EP 578712 A1 EP 1992-908100 19920403, WO 1992-DK103  
19920403; JP 06506352 W JP 1992-507967 19920403, WO 1992-DK103 19920403;  
US 5650315 A WO 1992-DK103 19920403, US 1993-107687 19930818; EP 578712 B1  
EP 1992-908100 19920403, WO 1992-DK103 19920403; DE 69229545 E DE  
1992-629545 19920403, EP 1992-908100 19920403, WO 1992-DK103 19920403; KR  
245614 B1 WO 1992-DK103 19920403, KR 1993-702874 19930924; FI 110435 B1 WO  
1992-DK103 19920403, FI 1993-4331 19931001

FDT EP 578712 A1 Based on WO 9217576; JP 06506352 W Based on WO 9217576; US  
5650315 A Based on WO 9217576; EP 578712 B1 Based on WO 9217576; DE  
69229545 E Based on EP 578712, Based on WO 9217576; FI 110435 B1 Previous  
Publ. FI 9304331

PRAI DK 1991-583 19910403

AB WO 9217576 A UPAB: 19931006

Protease (I) has the following properties (1) apparent **mol.**  
**wt.** 28 PrD; (2) isoelectric pt about 6.4; (3) pH optimum at 9-11  
(25degC); (4) temp. optimum 40-50degC (at pH 9.5) and (5) immunochemical  
properties (partially) identical to those of a **protease** from  
**Bacillus** Sp. JA16-38A, NCIMB 40263. Also new is an isolated,  
biologically pure culture of **Bacillus** sp. JA16-38A.

Pref. (I) is derived from the new **Bacillus**, esp. Strain NCIMB 40263,  
or mutants or variants. Pref prepn comprises culturing the new **Bacillus** on  
a standard nutrient medium aerobically. Culture is in an alkaline medium  
(the new species grows poorly at below pH 8) and extracellular proteases  
are recovered by usual methods, e.g. centrifuging, purifcn. of the conc.  
supernatant by anion-exchange chromatography or acetone pptn. then  
affinity chromatography.

USE/ADVANTAGE - High cost/performance ratio.

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